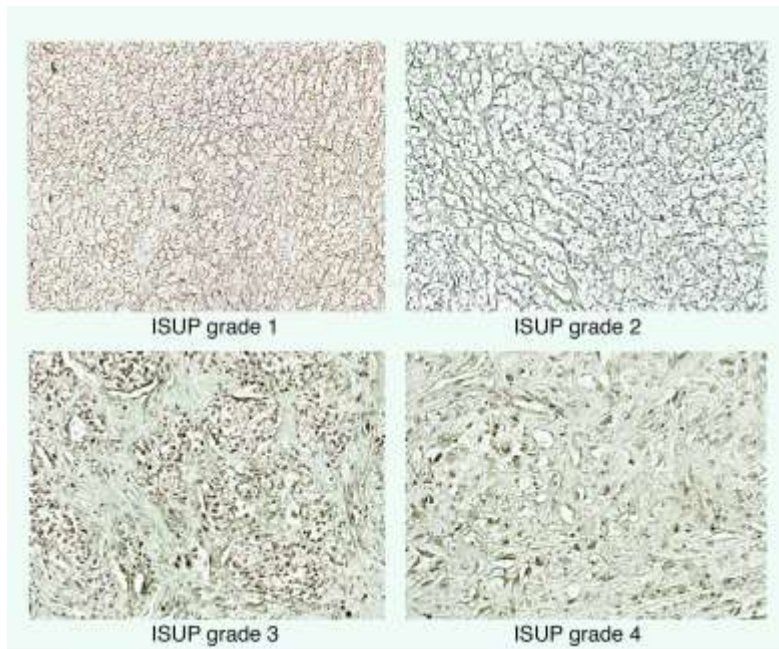


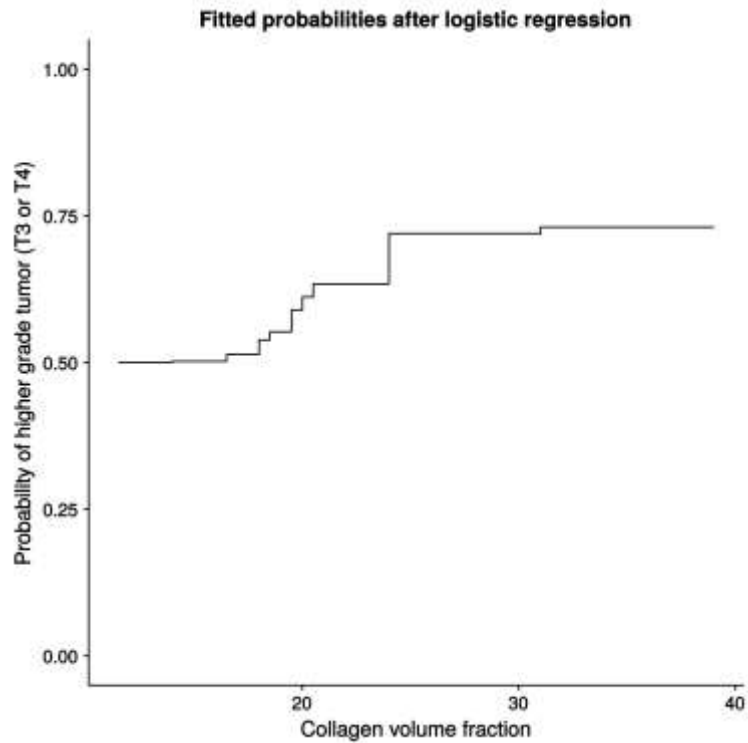
### Supplementary Digital Content Figure S1 Patient examples for ROI measurements.

Four patient case examples of ROI measurements. As customized color maps could not be exported as DICOM files to the PACS system, black and white images were used for analysis. Circular 2D ROIs were placed within the most homogeneous and bright appearing portion of solid tumor area on the basis of visual assessment in the postcontrast sequences (1b, 2b, 3b, 4b) and also in conjunction with T2-weighted images (1a, 2a, 3a, 4a). They were set in as large an area as possible and then copied to the MOLLI sequences (1c, 2c, 3c, 4c) by an automatic co-registration tool. The respective ROI areas and average T1 times are provided for all cases.



**Supplementary Digital Content Figure S2. Images in Masson Goldner Trichrome staining.**

Examples of magnified (x100) images in Masson Goldner Trichrome stained sections, based on 2 tiles and a bar indicating 100  $\mu\text{m}$ . Nuclei appear dark brown to black, while the connective tissue (collagen fibers) is green.



**Supplementary Digital Content Figure S3. Association between the collagen volume fraction and tumor stage**

A logistic regression was performed, using T1 relaxation times to predict higher grade tumors (T3 or T4 stage). Although T1 relaxation time was no statistically significant predictor ( $p > 0.05$ ), there is a trend of higher collagen volume fractions with higher tumor stages. At high collagen volume fractions of 40%, there is a probability of approximately 75% for a high tumor stage (T3 or T4).